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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,915	09/22/2006	Jill MacDonald Boyce	PU050005	6053

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EXAMINER

PHILIPPE, GIMS S

ART UNIT	PAPER NUMBER
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2482

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,915	Applicant(s) BOYCE ET AL.	
	Examiner Gims S. Philippe	Art Unit 2482	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/02/10, 03/22/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is a first office action in response to application no. 10/593,915 filed on September 22, 2006 in which claims 1-21 are presented for examination.

Specification

2. The disclosure is objected to because of the following informalities: The Specification refers to a cross-reference, however, application no. was omitted (See Cross-Reference to Related Application page 1).

Appropriate correction is required.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent Application Publication no. 2008/0304567 A1(10/593,536) to Boyce et al.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations of the present patent application are somewhat similar to the limitations of the cited Patent Application Publication no.

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying Boyce's scalable decoder by incorporating its teachings in the present Patent Application publication to provide the best method to code low downsampled prediction residual as taught by Boyce (See paragraph [0022]).

5. Claims 1-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of U.S. Patent Application Publication no. 2007/0286283 A1 (11/665,302) to Yin et al.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations of the present patent application are somewhat similar to the limitations of the cited Patent Application Publication no.

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying Boyce's scalable decoder by incorporating its teachings in the present Patent Application publication to provide the best method to code low downsampled prediction residual as taught by Boyce (See paragraph [0024]).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5, 7, and 11-18 are rejected under 35 U.S.C. 102(b) as being anticipated by De Bonet et al. (US Patent no. 6510177).

Regarding claims 1 and 12, De Bonet discloses a decoder for decoding a video bitstream for an image block, comprising: a motion vector resolution reducer for receiving decoded high resolution motion vectors included in the video bitstream and for reducing an accuracy of the high resolution motion vectors to correspond to a low resolution (See De Bonet col. 15, lines 35-37 and lines 50-64); and a motion

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compensator, in signal communication with said motion vector resolution reducer, for forming a motion compensated high resolution prediction using the reduced accuracy motion vectors (See De Bonet col. 10, lines 64-67 and col. 11, 1-7 and lines 17-23).

As per claims 2 and 13, De Bonet discloses in fig. 11A an entropy decoder further comprising an entropy decoder, in signal communication with said motion vector resolution reducer, for decompressing the video bitstream (See 11A item 1103); and an inverse quantizer/inverse transformer, in signal communication with said entropy decoder, for inverse quantizing and inverse transforming the decompressed bitstream to form a decoded prediction residual for adding to the motion compensated high resolution prediction to form a decoded image block (See fig. 11A, item 1103; the applicant should note that the inverse quantizer is an inherent feature in the decoder of item 1103).

As per claims 3, 14 and 17, De Bonet discloses a method for spatial scalable video decoding, comprising the steps of: upsampling a low resolution prediction residual to form an upsampled prediction residual (See De Bonet col. 13, lines 48-56); and forming a motion compensated full resolution prediction (See De Bonet col. 13, lines 59-66 and col. 14, lines 1-3); and adding the upsampled prediction residual to the motion compensated full resolution prediction to form a decoded image block (See De Bonet col. 17, lines 25-37).

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As per claims 4 and 15, De Bonet further discloses a scalable decoder wherein the added comprise a first adder in signal communication with said upsampler and said motion compensator, for adding the upsampled prediction residual to the motion compensated full resolution prediction to form a sum signal; and a second adder, in signal communication with said first adder, for adding a full resolution enhancement layer error signal to the sum signal to form a decoded block (See De Bonet fig. 11A, items 1118 and adder 1142 and output A of item 1145).

As per claims 5 and 16, De Bonet further provides a scalable decoder wherein the full resolution enhancement layer error is intra-coded (See De Bonet fig. 9, item 915).

Regarding claims 7, 11 and 18, De Bonet discloses in fig.11-A a method for decoding a base layer video bitstream and an enhancement layer video bitstream of an image block (See 11A item 1103) comprising the steps of inverse quantizing and inverse transforming the base layer video bitstream and the enhancement layer video bitstream to form a coded base layer prediction low resolution residual (See fig. 11A, item 1103; the applicant should note that the inverse quantizer is an inherent feature in the decoder of item 1103); upsampling the coded base layer prediction low resolution residual to form an upsampled base layer prediction residual (See fig. 11A upsampler 1106); forming a motion compensated prediction full resolution prediction (See fig. 11A, item 1118, the prediction step does include a motion compensation step); adding the motion compensated full resolution prediction to the upsampled base layer prediction residual

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to form a sum signal (See fig. 11A, item 1121); inverse quantizing and inverse transforming the enhancement layer video bitstream to form a coded enhancement layer prediction full resolution residual (See 11A, item 1124, the applicant should note that the inverse quantizing is inherent in decoder 1124); and adding the coded enhancement layer prediction full resolution residual to the sum signal to form a decoded image block (See fig. 11A, adder 1142 and col. 16, lines 38-67 and col. 17, lines 1-12).

8. Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by Nakagawa et al. (US Patent no. 6,104,434).

Regarding claim 6, Nakagawa discloses a spatial scalable video decoder for decoding a video bitstream of an image block (See decoder of fig. 13), comprising an entropy decoder for decompressing the video bitstream (See fig. 13, entropy decoder 54 and col. 21, lines 49-51); an inverse quantizer/inverse transformer in signal communication with said entropy decoder for inverse quantizing and inverse transforming the decompressed bitstream to form a coded prediction residual (See fig. 13, item 29a and 29b and col. 22, lines 51-52); an upsampler, in signal communication with said inverse quantizer/inverse transformer, for upsampling the coded prediction residual (See fig. 13 upsampler 49, and col. 21, lines 51-54); a motion compensator, in signal communication with said entropy decoder, for forming a motion compensated prediction full resolution prediction (See fig. 13, item 24a and col. 21, lines 54-57; the applicant should note that

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motion compensating is inherent in item 24a); and an adder, in signal communication with said upsampler and said motion compensator, for adding the upsampled prediction residual to the motion compensated full resolution prediction to obtain a decoded image block (See adder 31 of fig. 13, and col. 22, lines 14-19 also see fig. 8, items 31, 23-24a/b and output of decoded picture from node of adder 31).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 8-9 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Bonet (US Patent no. 6,510,177) in view of Nakagawa et al. (US Patent no. 6,104,434).

Regarding claims 8-9 and 19-20, most of the limitations of these claims have been noted in the rejection of claims 7 and 18.

It is noted that De Bonet is silent about reducing the blocking distortion in the decoded image block as specified in claims 8-9 and 19-20.

However, Nakagawa provides a decoding method comprising the step of reducing blocking distortion in the decoded image block (See fig. 13, filter 32a and col. 21, lines 49-58).

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying De Bonet decoder by incorporating Nakagawa's filter. The motivation for performing such a modification is to filter noises or artifacts produced in the vicinity of the boundary of those neighboring blocks as taught by Nakagawa (See Nakagawa col. 4, lines 29-34).

11. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Bonet (US Patent no. 6,510,177) in view of Applicant admitted prior art.

As per claim 10, most of the limitations of this claim have been noted in the rejection of claim 8.

It is noted that De Bonet is silent about a high resolution reference picture store in signal communication with a motion compensator as specified in the claim.

However, Applicant admits that such feature of providing a high resolution reference picture store in signal communication is well known as evidenced by Applicant's admitted prior art as seen in Fig. 7, items 750 and 760 and paragraph [0020].

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying De Bonet's spatial decoder by incorporating the applicant's admitted prior art wherein the high resolution reference

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picture store is in signal communication with the motion compensator to combine high resolution residuals with motion compensated full resolution prediction to obtain a decoded image block.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Barbarian et al. (US Patent Application Publication no. 2006/0039472 A1) teaches methods and apparatus for coding of motion vectors.

Zhong (US Patent no. 6931062) teaches decoding system and method for proper interpolation for motion compensation.

Chen et al. (US Patent Application Publication no. 2003/0118097 A1) teaches system for realization of complexity scalability in a layered video coding framework.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gims S. Philippe whose telephone number is (571) 272-7336. The examiner can normally be reached on M-F (10:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Banks-Harold Marsha can be reached on (571) 272-7905. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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